

## OLLI Equipment List for Zoom 8/22/20

The basic equipment needed when using Zoom is:

- A laptop computer, desktop computer, smartphone, or tablet
- Speakers (built-in or external), or a headset or earbuds
- A microphone either built-in or external
- A webcam either built-in or external
- A reliable internet connection (minimum 20 Mbps download speed)

Modern laptops and all-in-one desktop computers are usually equipped with good-quality speakers, microphone and webcam that are more than adequate for teaching or attending online classes. However, stand-alone desktop and older all-in-one computers may lack one or more of these items, or have poor quality or malfunctioning items, e.g., a microphone with distortion or a blurry webcam.

The information and suggestions offered here are for OLLI instructors and members who may need to update older or malfunctioning devices or add missing devices. Unfortunately, in our current market, some of these items may be almost impossible to find or are priced far above their normal (pre-COVID) prices. We list the MSRP so you'll know if a price is reasonable.

### Internet Connection **\*\* section added 8/22/20 \*\***

We recommend that you check your internet speed using a website like [speedtest.net](https://www.speedtest.net). In the speed report, look for a minimum download speed of 20 Mbps and upload speed of 2 Mbps, though typical speeds these days may be 60-80 Mbps download and 5-10 Mbps upload. If the reported speed is significantly slower than what you expect for the monthly fee paid to your internet service provider (ISP), you can call your ISP to check out your service. They may find you have an older internet modem or router, or poor wiring connections, and replace them.

Here are a few more tips to improve your internet connection.

- Place your computer closer to the WiFi router; if close enough, use an ethernet cable (though that may require an adapter for a laptop)
- Connect your computer to the faster 5 GHz band instead of the (default) 2.4 GHz band.
- Consider obtaining a WiFi extender or mesh WiFi system for a larger residence.

## Audio Equipment

### Headsets

Not all headsets are created equally, and what works for you might not work for me. While earbuds may be convenient, they don't offer the best sound quality. Corded earbud cables can rub on your clothing, causing unwanted noise or restricting your movements. While headsets can be bulky and hair flattening, most have better mics and come with noise cancellation to reduce background sounds. When shopping for a headset, consider noise-cancellation and distance of microphone to mouth.

- **On the Ear Headphones**
  - ✓ **Good:** [Logitech Stereo](#) MSRP \$15
  - ✓ **Better:** [Logitech H390](#) MSRP \$25
- **Earbuds** Any of the ones that come with a smartphone will work. You can also purchase them separately. Be sure to note if your phone uses an audio jack (round plug) or a lightning connector (iPhone) or USB-C (flat plug).
  - ✓ **Audio jack:** [Apple earbuds](#) MSRP \$19
  - ✓ **Lightning connector:** [Apple earbuds](#) MSRP \$18
  - ✓ **USB-C connector:** [KINGONE](#) MSRP \$16

### Microphones

There are three types of microphones available. **Omni-directional** mics pick up sounds from all around the microphone. These mics are used for recording a group of people in a small room during a conversation. **Uni-directional** (aka Cardioid) mics only pick up sound where it's aimed at (i.e., your mouth). These mics are best for noisy households with sounds from other rooms easily overheard; this is the type we recommend. **Bi-directional** mics are mostly used for duets or interviews.

Note that all of our recommendations are for plugging into a computer USB port.

- **Budget/Good:** [TONOR TC-777](#) MSRP \$49 (This is the one an OLLI staff member uses.)
- **Budget/good:** [FiFine K668](#)
- **Better:** [FiFine T669](#) MSRP \$75.99
- **Best:** [Blue Yeti](#) MSRP \$129.99

## Microphone Accessories (Optional)

- **Pop filters/screen:** These are used to cut out sharp syllables. The B's P's T's S's C's that cause clicks and extra mouth noises can quickly become smoother by using a pop filter. You can get a screen made for the mic you buy, or you can get a generic pop filter to attach to the base of the mic or mic stand. [Here's an Amazon bestseller.](#)
- **Foam Wind Guard:** These little sleeves are used to defuse the air that hits the microphone when talking. [Here's an Amazon bestseller](#)

## Video Equipment

### Webcams

Webcams are not created equally. Webcams are built for specific needs. Factors to consider when buying a camera are megapixels(mp), frames per second (fps), auto-focus, built-in microphones, and mounting capabilities. Basically, Logitech is the king of the webcam world. Again, this is a list of recommendations for those who don't have a built-in webcam. These are hard to come by right now, so the best webcam is the one you already have.

- **Best Budget Choice:** [Logitech C270](#) MSRP \$39.99 or [Microsoft LifeCam](#) MSRP \$37.95
- **Best Choice for Students/Most Recommended:** [Logitech C920](#) MSRP \$69.99
- **Best choice for Teaching:** [Logitech C920 HD](#) MSRP \$79.99
- **Best choice for Teaching Hands-on art/Streaming:** [Logitech Brio](#) MSRP \$199

Here's a list of pros and cons for seven cameras to consider.

<https://teachandgo.com/blog/webcams-online-teaching/>

### Document cameras

These cameras are built for shooting video straight down. Mainly used for sharing documents, art, or books, these are great cameras for teaching hands-on-art classes, typography classes, tutoring, or even high-quality photographs of your documents. Note, however, that these are mounted on a pivoting arm, so can be used as an alternative to a traditional webcam.

- **Good/Budget:** [Hue HD Pro](#) MSRP \$79
- **Better:** [IPEVO: VZ-R HDMI/USB Dual Mode](#) MSRP \$219
- **Best:** [Elmo MX-p2](#) MSRP \$599

### Lighting

An important consideration in using Zoom is to have proper lighting. You want to have an evenly-lit face, without any glare from windows or indoor lighting. Use natural light where possible, by sitting facing a window. Avoid any bright window or lights behind you, as they will wash out the video and make your face appear dark. When using indoor lighting, avoid directly shining a light on your face and instead bounce it off a wall or ceiling. If you need better lighting to teach subjects like hands-on art, here are some excellent ideas:

<https://teachandgo.com/blog/best-video-lighting/>

### Other Accessories

- [Monitor riser](#)- make sure you are looking at the camera. Or at least make it look like you are. We suggest raising your webcam so that it is eye level with you. Example: my monitor riser is 8 inches. [It's a wood shelf used behind a kitchen sink](#); it is what I already had, and it works fantastically. One of our instructors this summer used a few textbooks in a pile to get their webcam to the right level.
- [Bendy Tripod](#)- if your webcam has a tripod mount on it, these bendy tripods are great. They can also be used for microphones or lights.
- [Tablet Stand](#) or [like this one](#) would allow you to set your tablet on a table without having to hold it up, causing it to shake as you move. This movement can be very distracting.
- [Notes holder](#): this will allow you to look up at your camera more often. You could even set it up behind your camera so that you are looking at the camera by default.

### Helpful Apps

- **Zoom:** [www.zoom.us/download](http://www.zoom.us/download)
- **Mobile Scanning App:** [Adobe Scan](#)- allows you to take a photo on your smartphone of a document or book and turn them into a PDF to send to your students.